USING EVIDENCE BASED DESIGN TO DEVELOP AN INCLUSIVE CLASSROOM

HONORS THESIS DEFENSE

Kaitlyn Jackson

Advisor: Dr. Mihyun Kang

Second Reader:

Dr. Tilanka Chandrasekera

Guiding Principles: Evidence Based Design

- Evidence Based Design is the method of developing a built environment based on credible research to achieve the most effective design.
- The design of a space is critical to the function, mood, efficiency, and effectiveness of an environment, making it crucial especially in educational facilities.
- Encourage a balance of independent study, group study, and social interactions to provide the optimal learning environment for every student.

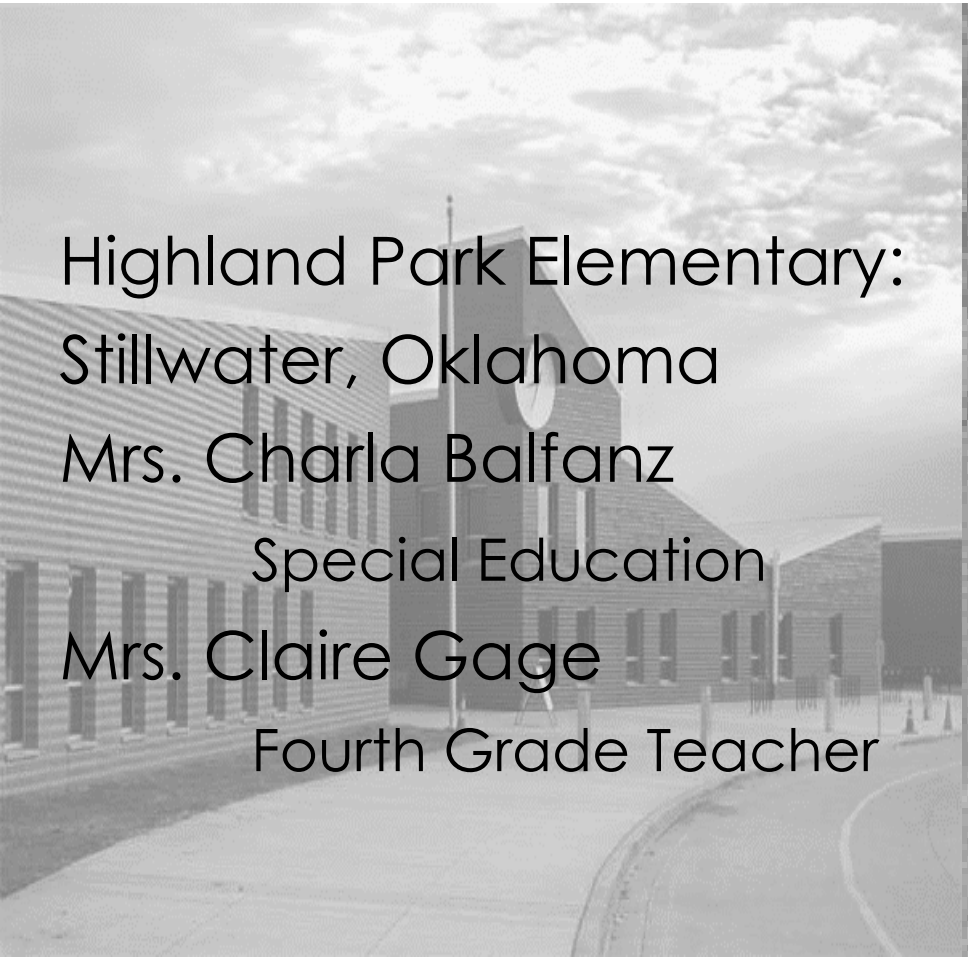
Guiding Principles: Inclusive Classroom

- An inclusive classroom is a general education classroom that also includes students with disabilities.
- Support students on the Autism Disorder Spectrum in an inclusive classroom environment, while also fulfilling the needs of the general education students and the educator.
  - Approximately 1 in 68 children has been diagnosed with autism spectrum disorder (ASD) according to estimates from CDC's Autism and Developmental Disabilities Monitoring (ADDM) Network.

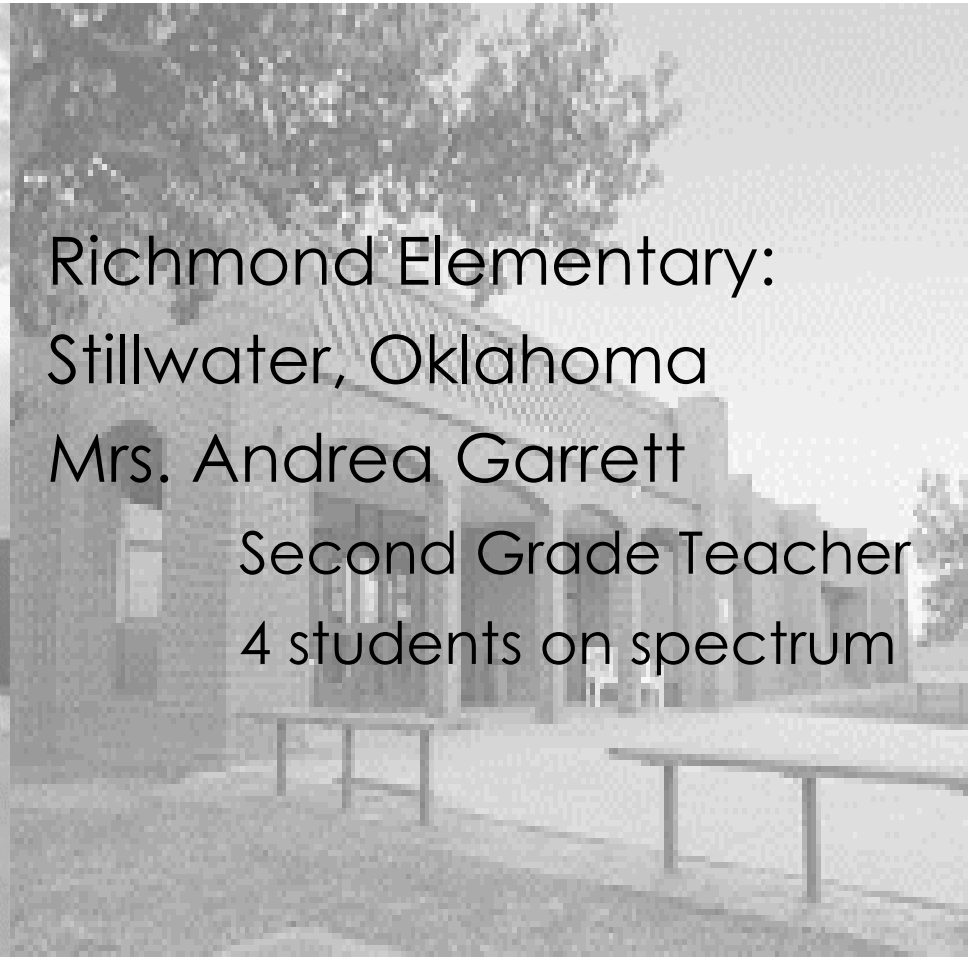
Objectives

- Accessibility/Mobility
  - Pertains to building elements, heights and clearances implemented to address the specific needs of children with different needs, including sensory sensitivity.
- Aesthetics
  - Pertains to the physical appearance, scale and image of the interior elements of the classroom, including wall space for display, natural lighting, universal design, and texture.
- Functional/Operational
  - Pertains to functional programming-spatial needs and requirements, system performance as well as durability and efficient maintenance of interior elements.
- Secure/Safe
  - Pertains to the physical protection of the students and educators from man-made and natural hazards.

Evidence Based Design: Interviews



Highland Park Elementary:
Stillwater, Oklahoma
Mrs. Charla Balfanz
Special Education
Mrs. Claire Gage
Fourth Grade Teacher



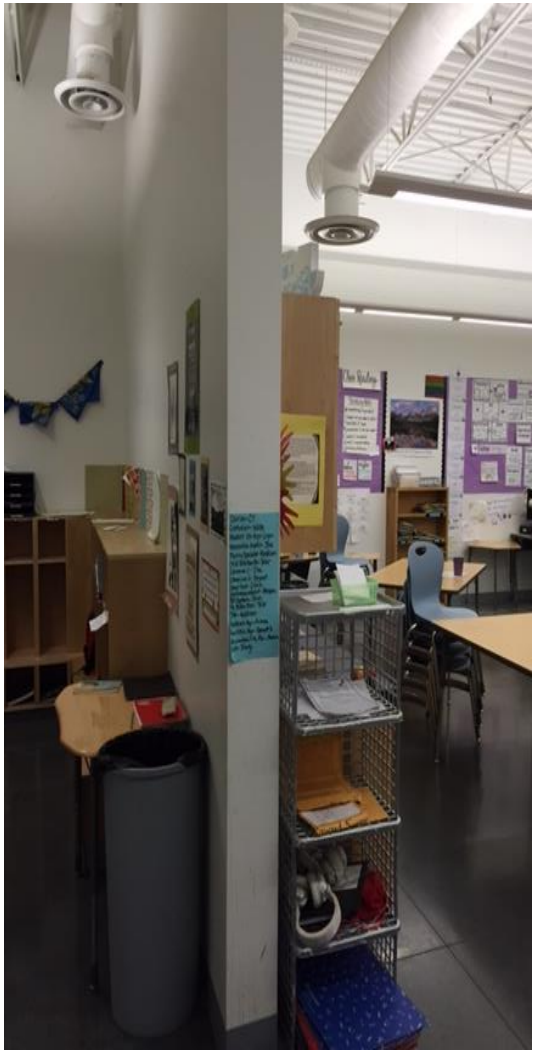
Richmond Elementary:
Stillwater, Oklahoma
Mrs. Andrea Garrett
Second Grade Teacher
4 students on spectrum

Evidence Based Design: Interviews

Challenges:
- Limitation of space
- Sound and acoustics
- Storage
- Line of sight

Catering to students on the Spectrum:
- Change and transition
- Cool down zone
- Safezone
- Calming effects
- Sensory

Everyday Needs:
- Technology
- Lighting
- Furniture
- Safety



Evidence Based Design: Cannon Design + VS Furniture + Bruce Mau Design, 2010

The Third Teacher: 79 Ways You Can Use Design to Transform Teaching and Learning

- 75% of America's six million students with disabilities are being educated in the general education classroom.
- "Design with words: What you say influences what you think and what you do."
- Keys for inclusive classrooms:
  - Social experiences
  - Nurturing climate
  - Activity-based
  - Sensory-rich
  - Developmentally appropriate
  - Flexible

Evidence Based Design: Janelle M. Piercea , Amy D. Spriggsb, David L. Gastc and Deanna Luscrea, 2013

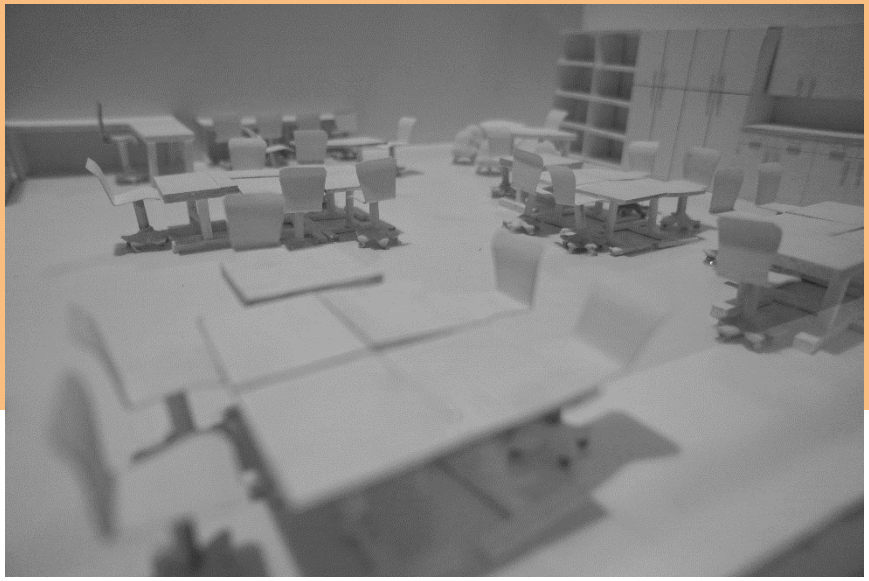
"Effects of Visual Activity Schedules on Independent Classroom Transitions for Students with Autism"

- Students with AD have a hard time with verbal cues
- Visual cues make transitions easier
- A visual calendar and schedule need to be in clear sight

Evidence Based Design: Edward Duncanson

"Lasting Effects of Creating Classroom Space: A Study of Teacher Behavior"

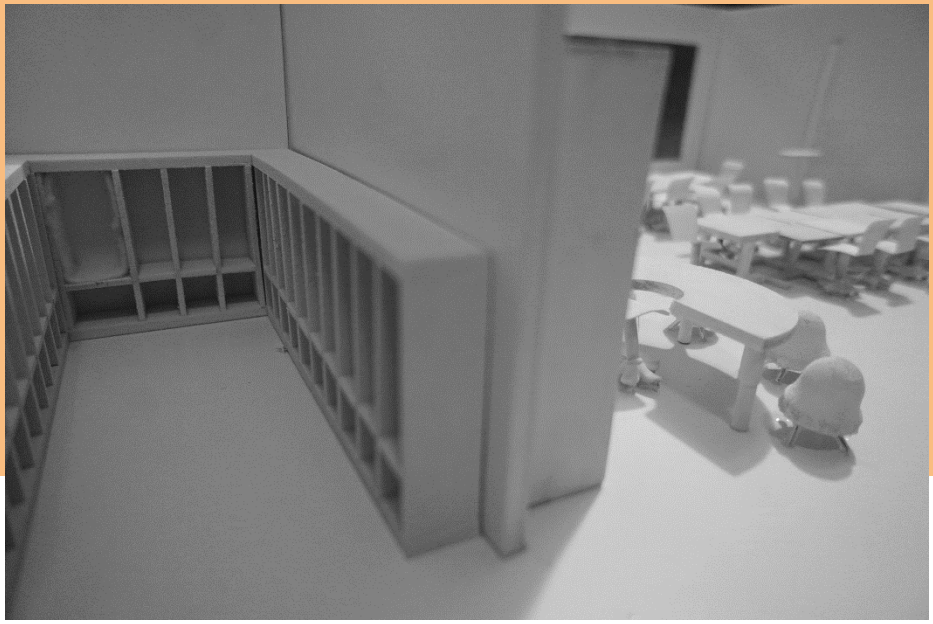
- Kids view space horizontally, while adults view it vertically.
- Arranging desks in clusters encourages exploration.
- Students select their own space to work based on three criteria:
  - Need for a solid work surface
  - Physical comfort
  - Autonomy



Evidence Based Design: Vogel, Clare L, 2008

"Classroom Design for Living and Learning with Autism"

- Kids with autism are extremely sensitive to any sensory element Achieve flexibility with lighting, furniture, and furniture layouts.
- Keys to a Successful Inclusive Learning Environment
  - Non-Threatening
  - Non-Distracting
  - Predictable
  - Understanding
  - Controllable
  - Safety

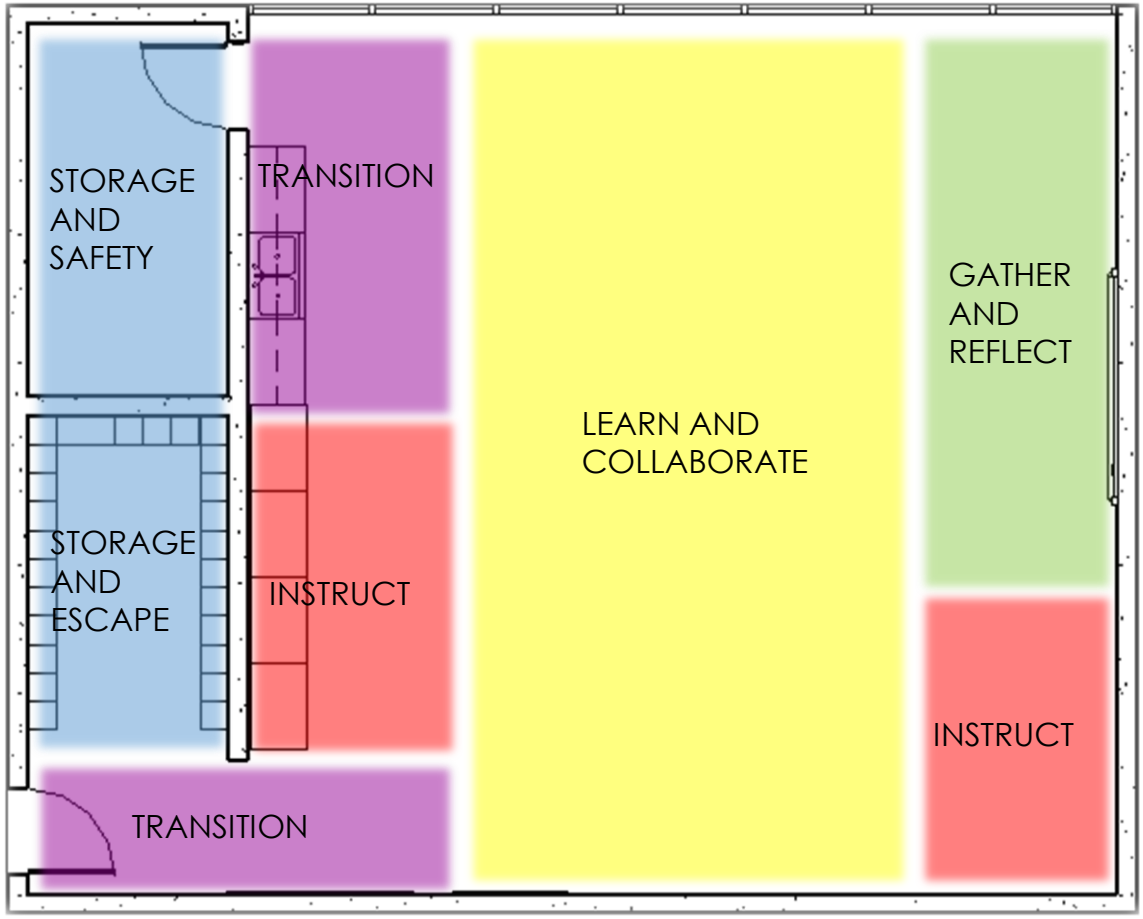


Programming

- Cubby/student storage area
- Safe zone/quiet zone for ASD students
- Closet/lockable safety room for teacher storage and emergency shelter
- Closed storage for teaching materials
- Sink/water fountain
- Library with book display
- Open space for activities
- Projector/whiteboard space with podium
- Teacher desk/work area
- Teacher/student interaction area
- Students work area/desks

Process: Zoning

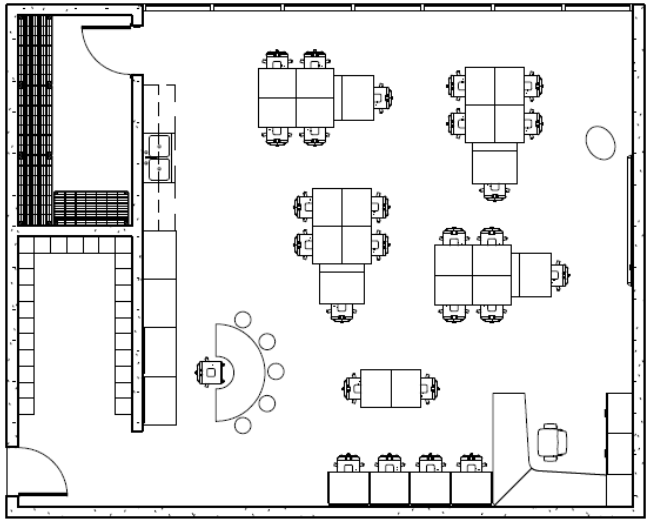
Rooms that implement zoning and can be easily reconfigured meet the needs of the most diverse group of learners.

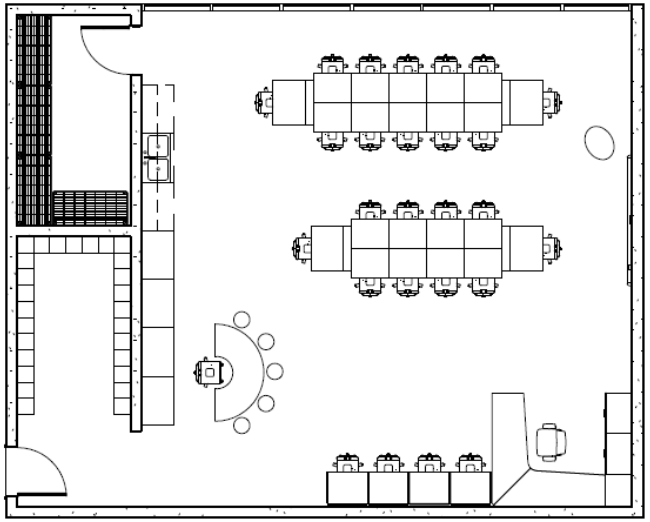


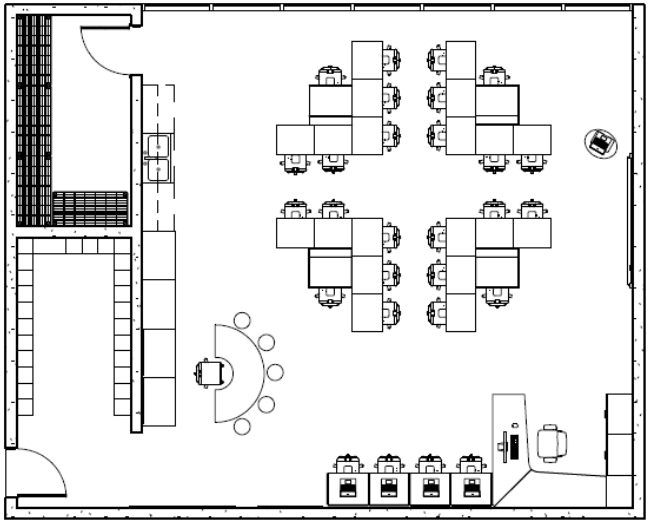
Furniture Plans

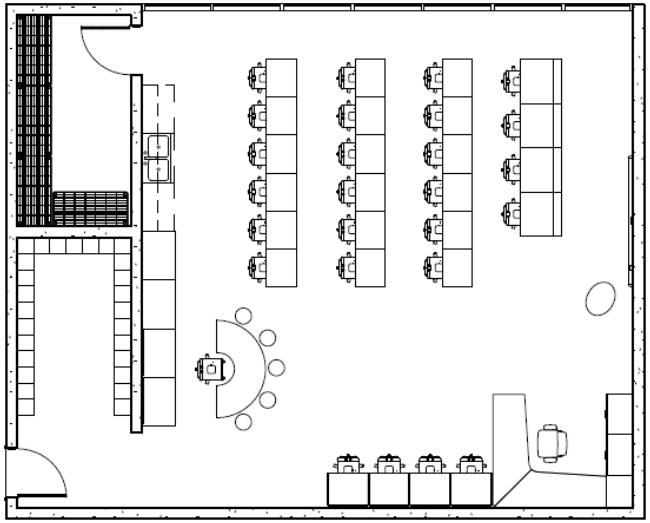
Visibility:

Teachers have 180 degree peripheral while students have 120 degree peripheral.

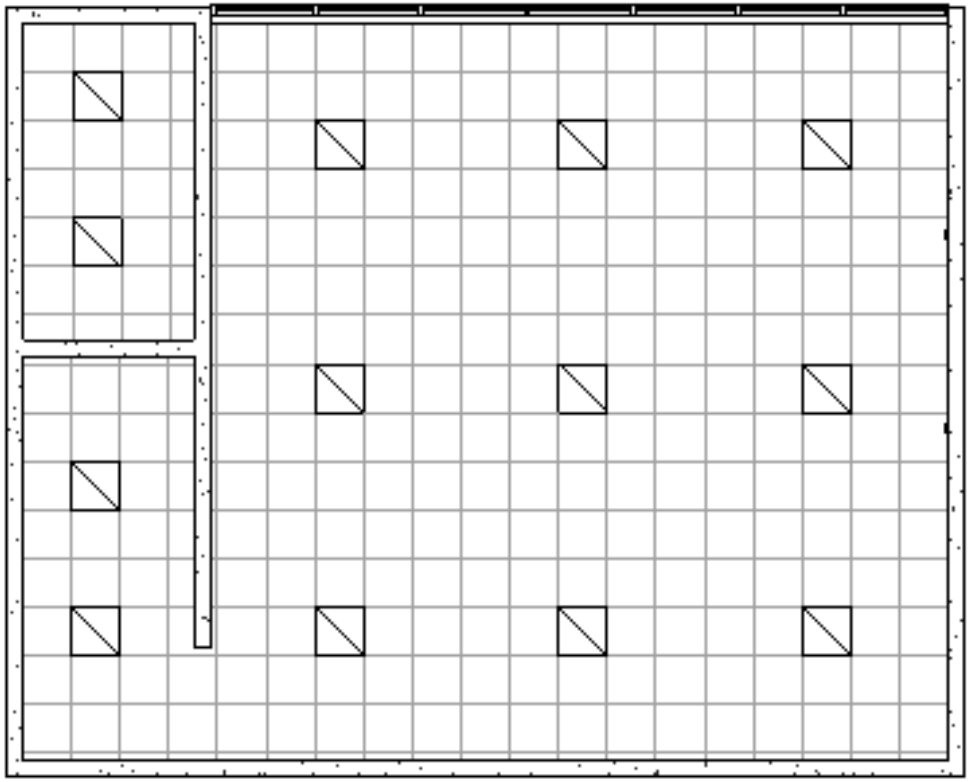








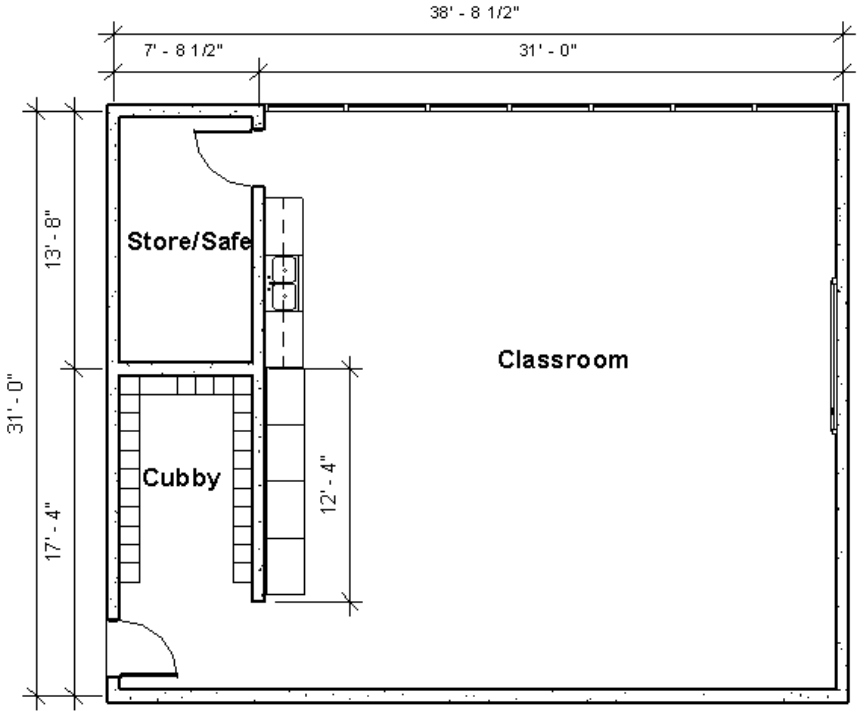
Lighting Plan



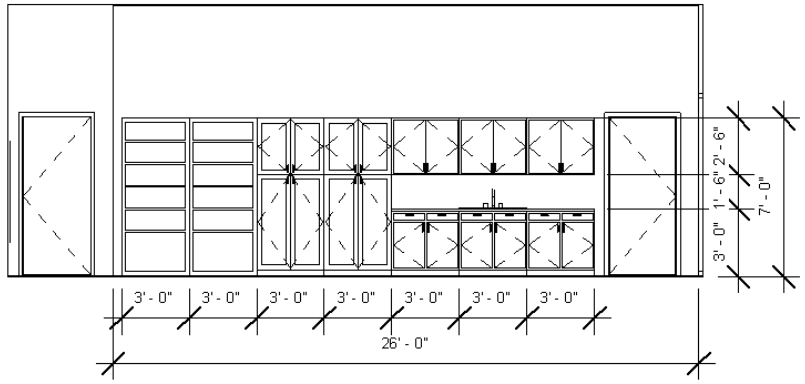
LED 2x2 Troffer

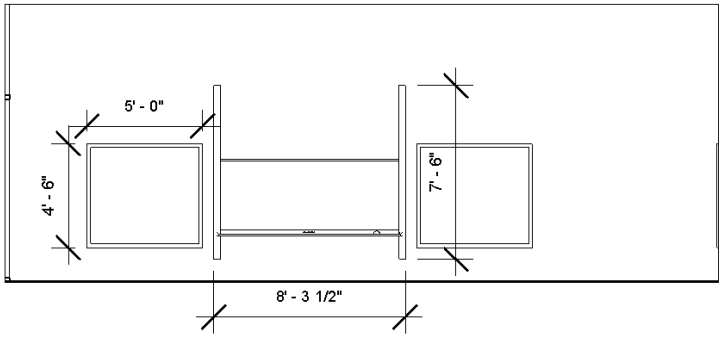
- Dimmable
- Color Changing
- Daylight Sensing
- Diffused Lens

Floor plan and Elevations



Storage Millwork Typical





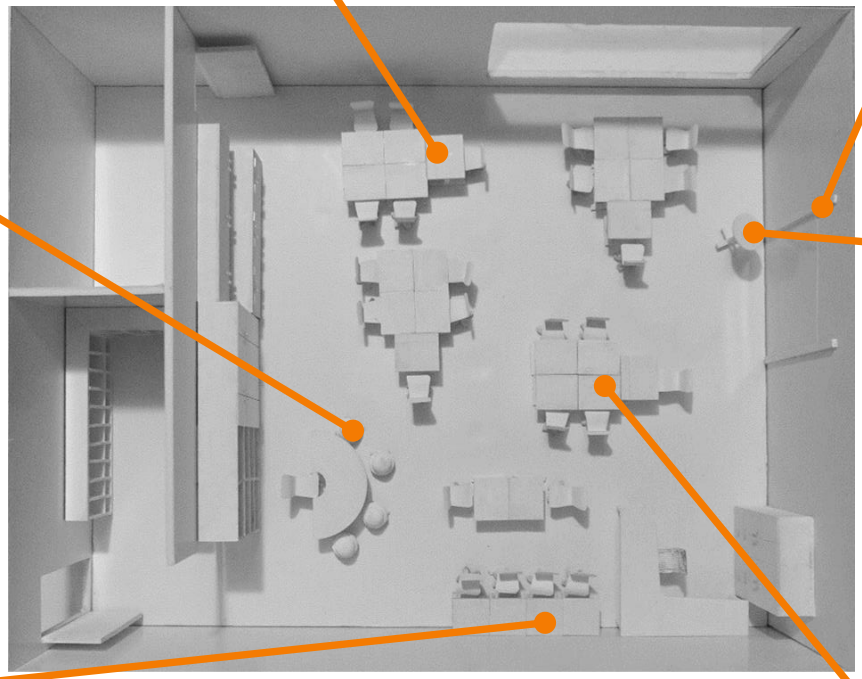
Smartboard Mounting Typical

Furniture

Student Desk

Adjustable Height Whiteboard

Fidget Seating



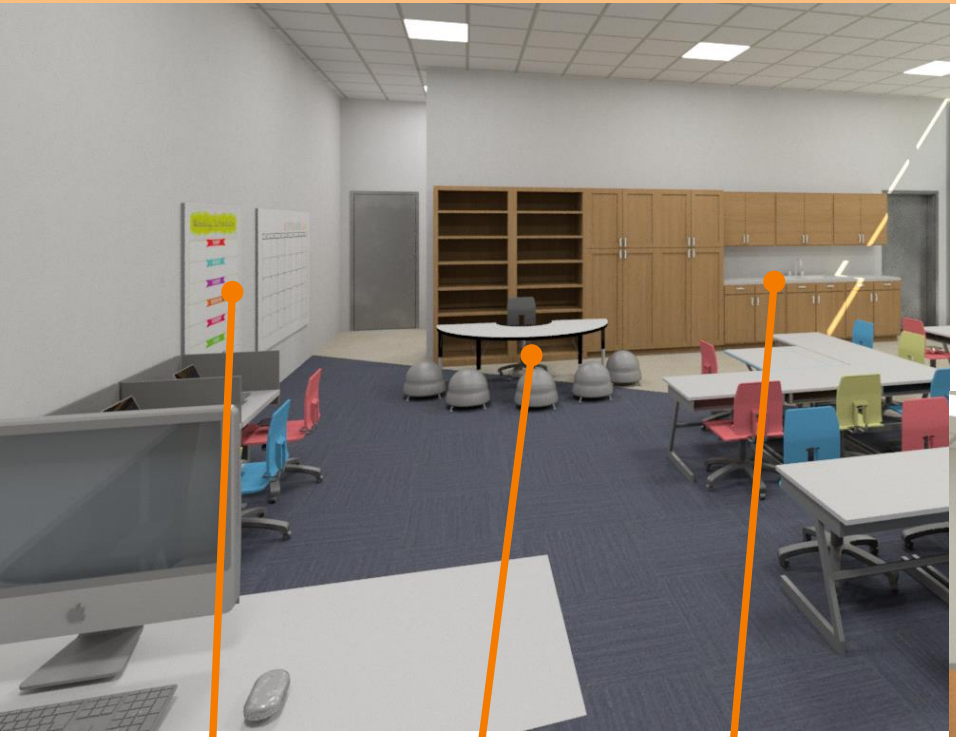
Movable Podium

Activity Table

Multi-functional Panels

Student Desk

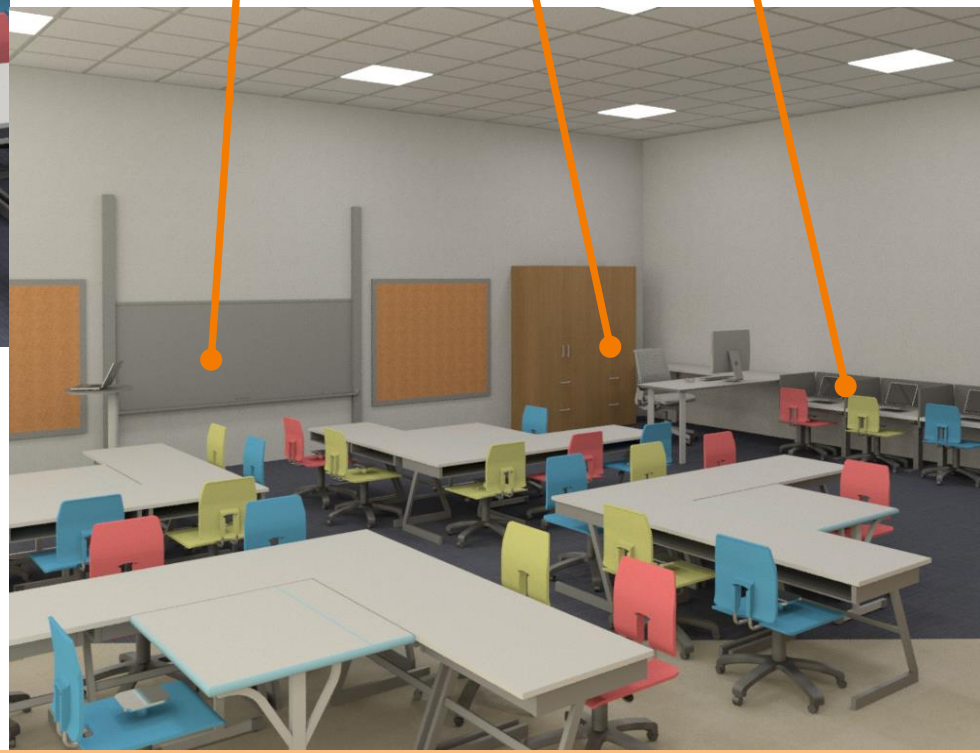
Renderings



Daily Activities and Calendar

Group Activity Center

Storage and Sink with Counterspace



Height Adjustable Smartboard

Teacher Workstation

Student Technology Center